Index • 1979 • Volume 22
The Journal of Environmental Sciences

INDEX BY AUTHOR

A

Anderson, J. E. and H. C. Hurley, *Random Vibration Screening of an Airborne Digital Computer*, No. 5, p. 22.

B

Betts, A. W., *The Nuclear Challenge*, No. 4, p. 9.

Bodman, H. A., J. M. Rappeport and R. B. Kundsin, *Clean Room and Laminar Flow Room Microbiology in the Treatment of Bone Marrow Transplant Patients*, No. 4, p. 27.

Bonetti, A. F., *An Effective Thermal Cycle Screen for Electronic Subassemblies*, No. 4, p. 14.

C

Caruso, H. J., *Operational Combined Environment Test Facilities*, No. 5, p. 9.

Clarke, J. M. *No-Growth Reliability Growth Curves*, No. 2, p. 35.

D

Drabik, L., *Research and Development in the Automotive Test Laboratory*, No. 6, p. 25.

G

Gaudet, J. J., *International Electrotechnical Commission Sub-Committee 50B Climatic Tests*, No. 5, p. 33.

Gramm, W. P., *Economics, Technology and the Environment*, No. 3, p. 11.

Gregory, W. S., H. L. Horak, P. R. Smith and C. I. Ricketts, *HEPA Filter Efficiency During Large Pressure Transients*, No. 1, p. 16.

H

Hamilton, J. W. and N. J. Plotkin, *Analysis of MIL-STD-810C Climatic Test Methods*, No. 2, p. 22.

Hancock, R. N., *Environmental Engineering Hardware Program Requirements*, No. 5, p. 27.

Haslem, W., *The Ultimate in Test Realism—Testing in the Natural Environment*, No. 5, p. 31.

Hermes, P., *Proposed Environmental Integration Program for Airborne Weapons Systems and Avionics*, No. 6, p. 27.

Horak H. L., P. R. Smith, C. I. Ricketts and W. S. Gregory, *HEPA Filter Efficiency During Large Pressure Transients*, No. 1, p. 16.

Huntley, B. L., *Electrohydraulic—The Most Versatile Shaker?* No. 2, p. 32.

Hurley, H. C. and J. E. Anderson, *Random Vibration Screening of an Airborne Digital Computer*, No. 5, p. 22.

K

Kundsin, R. B., H. A. Bodman and J. M. Rappeport, *Clean Room and Laminar Flow Room Microbiology in the Treatment of Bone Marrow Transplant Patients*, No. 4, p. 27.

L

Levine, A. S., K. Robichaud, D. Marshall, E. Sussman and P. A. Pizzo, *Past, Present, and Future Studies of Protected Environment Regimens in Cancer Treatment*, No. 3, p. 27.

Lohani, B. N., *Reliability Parameter in Dissolved Oxygen Studies in a River*, No. 4, p. 17.

M

Martin, R. W., *A New Look at Contamination Control*, No. 6, p. 24.

Metry, A. A., *An Overview of Residual Waste Treatment Technology*, No. 5, p. 15.

Montgomery, C. D., *The Munson Test Course: A Unique Army Facility for Vehicle Tests*, No. 6, p. 20.

P

Patterson, K. E., *An Integrated Approach to Residuals Management in Industry*, No. 6, p. 30.

Phaller, L. J., *Reliability Growth Through Environmental Testing*, No. 1, p. 32.

Pizzo, P. A., A. S. Levine, K. Robichaud, D. Marshall and E. Sussman, *Past, Present and Future Studies of Protected Environment Regimens in Cancer Treatment*, No. 3, p. 27.

Plotkin, N. J. and J. W. Hamilton, *Analysis of MIL-STD-810C Climatic Test Methods*, No. 2, p. 22.

Pollock, A. A., *An Introduction to Acoustic Emission and a Practical Example*, No. 2, p. 39.

R

Rappeport, J. M., R. B. Kundsin and H. A. Bodman, *Clean Room and Laminar Flow Room Microbiology in the Treatment of Bone Marrow Transplant Patients*, No. 4, p. 27.

Rauh, J. S., *Disinfection and Oxidation of Wastes by Chlorine Dioxide*, No. 2, p. 42.

Ricketts, C. I., W. S. Gregory, H. L. Horak and P. R. Smith, *HEPA Filter Efficiency During Large Pressure Transients*, No. 1, p. 16.

Robichaud, K., D. Marshall, E. Sussman, P. A. Pizzo and A. S. Levine, *Past, Present and Future Studies of Protected Environment Regimens in Cancer Treatment*, No. 3, p. 27.

Roy, J. A., *Unique Environmental Test Facilities at Orlando Division of Martin Marietta Aerospace*, No. 2, p. 17.

S

Schafer, H. C., *Quantification of the Storage Logistics Thermal Environment*, No. 1, p. 28.

Schulte, E. H., *The McDonnell Aircraft Company Lightning Simulation Laboratory*, No. 3, p. 22.

Simpson, M. H., *Effectiveness of Onsite Biogas Digesters and Sanitizing of Fecal Waste in Developing Countries—Part I*, No. 2, p. 29.

Simpson, M. H., *Demonstration of Anaerobic Digesters in Developing Countries—Part II*, No. 3, p. 16.

Smith, P. R., C. I. Ricketts, W. S. Gregory and H. L. Horak, *HEPA Filter Efficiency During Large Pressure Transients*, No. 1, p. 16.

Swett, B. H., *Reliability Growth Management*, No. 1, p. 9.

T

Tait, N., *Naval Air Development Center's Unique Environmental Test Facilities*, No. 1, p. 13.

U

Uri, N. D., *A Re-Examination of the Estimation of Undiscovered Oil Resources in the United States*, No. 3, p. 13.

Urrutia, J., *Automation of Climatic Test Chambers Using Microprocessor Programmers*, No. 3, p. 19.

V

Verhoeven, J., *Techniques to Obtain Atomically Clean Surfaces*, No. 2, p. 24.

W

Wang, L. K. and M. H. Wang, *Mathematical Modeling of Electrical Energy Consumption and Heating Requirements by Municipal Wastewater Treatment Plants*, No. 4, p. 23.

Wang, M. H. and L. K. Wang, *Mathematical Modeling of Electrical Energy Consumption and Heating Requirements by Municipal Wastewater Treatment Plants*, No. 4, p. 23.

Williamson, R. L., *A Paradigm for Environmental Considerations in Materiel System Design and Testing*, No. 4, p. 20.

INDEX BY SUBJECT

CONTAMINATION CONTROL

HEPA Filter Efficiency During Large Pressure Transients, Gregory, W. S. and Horak, H. L., No. 1, p. 16. *Nuclear facilities require ventilation for occupant health and safety reasons. Filtration devices such as high efficiency particulate air (HEPA) filters are located within the ventilation system to assure removal of contaminated particulate material from the exhaust air. A drop in efficiency and possibly complete loss of filtration capacity can occur under the abnormal flow conditions caused by pressure transients.*

Techniques to Obtain Atomically Clean Surfaces, Verhoeven, J., No. 2, p. 24. *Contamination and cleaning of surfaces play an*

important role in many fields of surface science (catalysis, oxidation, alloys, semi-conductors, etc.). In this paper techniques for preparing atomically clean surfaces are reviewed. The advantages and disadvantages of several methods are discussed.

Past, Present, and Future Studies of Protected Environment Regimens in Cancer Treatment, Pizzo, P. A., Levine, A. S., Robichaud, K., No. 3, p. 27. *The design of patient protection regimens must be comprehensive in view of the dual contribution of the patient' endogenous and exogenous microbial flora to subsequent infection. This necessitates the combined use of physical isolation, air filtration, gastrointestinal and cutaneous decontamination, and a semisterile diet and water supply.*

Clean Room and Laminar Flow Room Microbiology in the Treament of Bone Marrow Transplant Patients, Kundsin, R. B., No. 4, p. 27. *Whether or not environmental microorganisms are a risk to susceptible patients is a controversial area. To resolve this controversy, studies of patients cared for in monitored environments need to be done. At the Peter Bent Brigham Hospital, twenty-one patients have been intensively followed microbiologically with personal and environmental cultures at regular intervals.*

The Nuclear Challenge, Betts, A. W., No. 4, p. 9. Keynote address presented at the 25th Annual Technical Meeting of the Institute of Environmental Sciences, April 30, 1979, Seattle, Washington. *This presentation addresses the following questions: Is nuclear energy safe? Can't we meet all our needs with alternative sources of energy? With all the available alternatives, why nuclear? What do we do about hazardous radioactive wastes? Won't nuclear power be far too expensive? Do we really need to expand our electrical energy capacity? Why can't we get along with existing generating capacity through a concerted effort to conserve energy?*

A New Look at Contamination Control, Martin, R. W., No. 6, p. 24. *A summary of the unique problems facing contamination control technology and recommendations for future directions.*

EARTH SCIENCES

Ecological Impact and Assessment

Economics, Technology and the Environment, Gramm, W. P., No. 3, p. 11. *"Technological development represents our best hope of dealing with the environment." "It is a myth to say there is a tradeoff between technological progress and economic growth on one hand and the environment on the other." "If we're going to examine the impact of economic growth and technology on the environment, we should look at that impact in the context in which the economic growth occurred."*

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The Nuclear Debate, No. 6, p. 9. *The transcript of a panel discussion on the economic aspects and social consequences of nuclear energy.*

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Mathematical Modeling of Electrical Energy Consumption and Heating Requirements by Municipal Wastewater Treatment Plants, Wang, M. H. and Wang, L. K., No. 4, p. 23. *Electrical energy consumption models are developed for the unit operations/processes of pumping, screening and comminution, grit removal, sedimentation, chlorination, gravity thickening, anaerobic digestion, vacuum filtration, incineration and diffused air flotation. The mathematical models of total heating requirements of biological wastewater treatment plants are also derived and presented.*

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Environmental Regulation and Management

Effectiveness of Onsite Biogas Digesters and Sanitizing of Fecal Waste in Developing Countries—Part I, Simpson, M. H., No. 2, p. 29. *This paper examines the use of anaerobic digesters for converting rural wastes into biogas in developing countries.*

Disinfection and Oxidation of Wastes by Chlorine Dioxide, Rauh, J. S., No. 2, p. 42. *Recent developments and improvements in on-site generation and handling of chlorine dioxide solutions allow for easy adaptation to various waste effluent situations. Effective reduction of specific pollutants with minimum alteration or modification of existing process facilities is discussed.*

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Research and Development in the Automotive Test Laboratory, Drabik, L., No. 6, p. 25. *This article describes those laboratory test stations dealing with environmental considerations. The laboratories were designed to perform extensive reliability and performance test on automotive fuel management components and systems under development for future automotive applications.*

An Integrated Approach to Residuals Management in Industry, Patterson, K. E., No. 6, p. 30. *This paper recognizes the need for addressing environmental problems from a multi-media point of view (air, land and water simultaneously).*

TEST AND EVALUATION

Acoustics

Naval Air Development Center's Unique Environmental Test Facilities, Tait, N., No. 1, p. 13. *The five facilities described in this article were selected on the basis of its unique function, capability, design and contribution to the Center's missions. The Naval Air Development Center (NAVAIRDEVCEN) at Warminster, Pennsylvania, is a principle Navy research, development, test and evaluation (RDT&E) center for naval aircraft systems.*

An Introduction to Acoustic Emission and a Practical Example, Pollock, A. A., No. 2, p. 39. *This paper covers the following topics: (1) fundamentals and material behaviour, (2) scope of applications to non-destructive testing and quality control, (3) instrumentation principles, (4) typical applications, (5) limitations.*

Climatics

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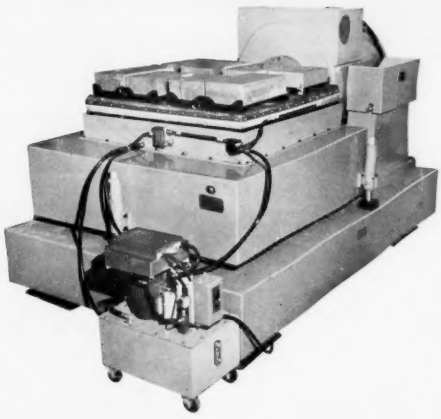

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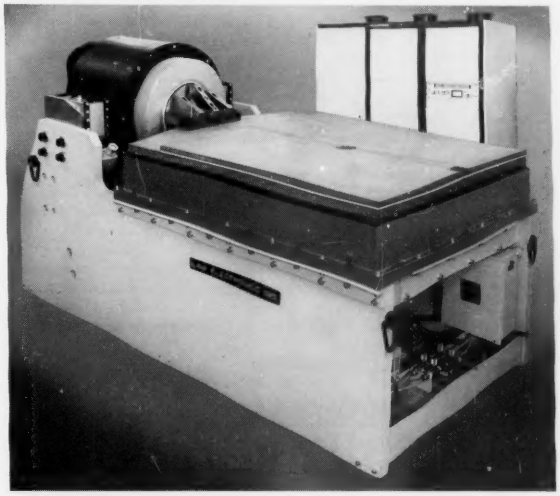

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Analysis of MIL-STD-810C Climatic Test Methods, Hamilton, J. W. and Plotkin, N. J., No. 2, p. 22. *A survey of MIL-STD-810C based on responses from representatives of the Department of Defense, other government agencies and industry, including many IES members. Survey questions included: How much guidance is enough? What kind of guidance is needed? Can one approach satisfactorily the varying needs of all prospective users? What role should the document play in future development of environmental test specifications and test plans.*

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The McDonnell Aircraft Company Lightning Simulation Laboratory, Schulte, E. H., No. 3, p. 22. *The McDonnell Aircraft Company (MCAIR) Lightning Simulation Laboratory conducts developmental lightning simulation tests as well as qualification tests on aircraft assemblies. This paper describes some of the unique generators used for conducting high-voltage, high-current, swept stroke, and induced-transient simulated lightning tests.*

An Effective Thermal Cycle Screen for Electronic Subassemblies, Bonetti, A. F., No. 4, p. 14. *This paper describes a manufacturing screen for temperature-sensitive defects to find problems early in the manufacturing cycle, thus reducing manufacturing costs.*

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Criteria and Standards

Reliability Growth Management, Swett, B. H., No. 1, p. 9. Presented as the keynote address at the Seminar on Reliability Growth-Management, Testing, and Modeling sponsored by the Chesapeake Chapter of the Institute of Environmental Sciences, February 1978, Washington, D.C. *"The poor operational reliability of many defense systems tells us we need to do something we have not done before. . . . The first objective is operational reliability and maintainability. . . . The second objective is to minimize acquisition cost and schedule. . . . The challenge is how to maximize operational return on cost and schedule investment in reliability growth."*

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A Paradigm for Environmental Considerations in Materiel System Design and Testing, Williamson, R. L., No. 4, p. 20. *This paradigm puts test structuring into a conceptual framework that in part explains how the current materiel environment design and test system works, and in part suggests how it could work more efficiently and realistically.*

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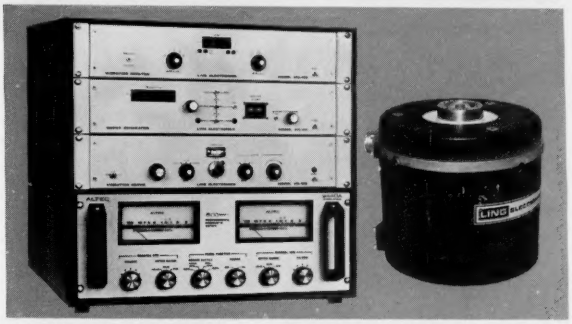

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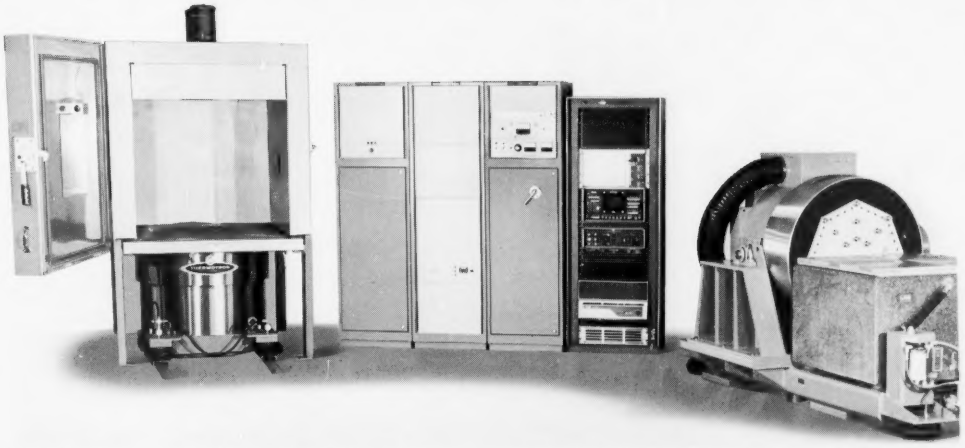

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